

## ABSTRACT

A method is provided of identifying compounds for use in a pharmaceutical composition having an anti-viral effect against CXCR4-dependent HIV activity comprising: providing a first aliquot of CXCR-4-expressing GH-Tg cells; contacting said first aliquot with HIV particles; providing a second aliquot of CXCR4-expressing GH-Tg cells; contacting said second aliquot with a test ligand; contacting said second aliquot with HIV particles; and isolating virus from said first and said second aliquot of cells, wherein a decrease in the ability to isolate virus from said second aliquot cells indicates said test ligand possess anti-viral activity against HIV. Also provided is a method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a disease involving CXCR4-dependent chemotaxis comprising providing a first aliquot CXCR4-expressing GH-Tg cells; contacting said first aliquot with CXCL12; measuring a first migration index; providing a second aliquot of CXCR4-expressing GH-Tg cells; contacting said second aliquot with CXCL12; contacting said second aliquot with a test ligand; measuring a second migration index; and determining a therapeutic potential. In addition, compounds for use in a pharmaceutical composition having a therapeutic effect against a SOCS3 inhibitable disease are identified by a method comprising: providing a first cell having at least one chemokine receptor expressed thereon, said first cell having been transfected with at least one SOCS construct; contacting said first cell with at least one chemokine, measuring a first migration index; providing a second cell having at least one chemokine receptor expressed thereon, said second cell having been transfected with at least one SOCS construct; contacting said second cell with at least one chemokine; measuring a second migration index; and determining a therapeutic potential. Subjects having a disease associated with CXCR4-dependent HIV are treated by administering to said subject a therapeutically anti-viral effective amount of a compound that induces the expression of SOCS3 and a pharmaceutically acceptable carrier.